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**ADDITIONAL COMMENTS FROM SHOSHONE-BANNOCK TRIBES, EPA
LETTER DATED SEPTEMBER 20, 2001 AND ASTARIS' RESPONSES**

ANDERSON FILTER MEDIA WASHING UNIT CLOSURE PLAN RECEIVED

OCT 25 2001

OFFICE OF WASTE
& CHEM. MGMT.

1. General Comment, Maximum Waste Inventory.

The AFM Washing Unit was operated in a batch process from April 1992 through November 1995. Total capacity of the washing unit and the secondary container was 500 gallons.

What is the estimated number of batches processed through the washing unit? What is estimated volume of material that went to V-1400, to Waste Water Treatment Unit #12, and to V-3600?

Response: The following clarifying text has been added as a new paragraph after paragraph 2 of Section 2.2 of the closure plan: "From 1992 through 1995 on average, 8 rolls of AFM were used in the furnace building per day, regardless of the number of operating furnaces. Therefore, during operation of the AFM washing unit, approximately 8,000 rolls of furnace AFM were washed at the unit. The unit was only operated during day shift, Monday through Friday. The average wastewater flow from the unit was estimated to be 5 to 10 gallons per minute when in operation. Although the unit was not operated continuously, FMC assumed a constant use of 8 hours per day, 5 days per week to develop a range of maximum total volume of wastewater routed from the unit. During routing to the Medusa blowdown tank and then to the Wastewater Treatment Unit (WMU #12), the volume was estimated to be 82,000 to 164,000 gallons. During routing to Tank V-3600 and then to the Phosphy Waste Surface Impoundment Pond 16S (WMU #10) the volume was estimated to be 21,000 to 42,000 gallons."

Section 3.6, Maximum Waste Inventory. The following paragraph has been added: "The maximum inventory at the AFM washing station was 30 rolls of AFM (two skiffs). The skiffs are approximately 4 feet by 8 feet by 3 feet high and held 10 to 15 rolls of AFM each. The maximum waste inventory of 500 gallons of wastewater represents the maximum capacity of the unit because the wastewater was continuously drained through piping and routed to the Medusa blowdown tank (V-1400) and then to WWTU for treatment and recycling in the calciner scrubber operation and later to Tank V-3600 and then to the phosphy ponds for clarification and recycling as ICW."

The last sentence of Section 4.2 has been deleted because there is no AFM or wastewater in the unit. It is empty and dry.

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2. Section 3 – Closure Plan Description part 3.5, Sampling and Analysis Plan.

Following decontamination of the AFM Washing Unit, conduct a check of remaining frame and parts for Alpha and Beta radioactivity levels.

Response: Sections 3.3, 4.3, and 4.6.2 have been revised to state that the washing unit and frame will be sent off-site for scrap or disposal after decontamination. All applicable RCRA requirements will be followed.

The history of the Unit and the radiological issues related to disposal of the AFM is explained in Sections 2.1 and 2.2 of the Closure Plan. The AFM washing unit was operated to lower the naturally occurring radionuclides in the AFM to meet the permitted levels of the disposal facility. As stated in the Health and Safety Plan (Appendix A), surveys have shown that exposure levels at the plant and in the vicinity are well below occupational radiation exposure limits.

In order to determine the amount of removable radioactive material that may be associated with the decontaminated AFM Washing Unit materials, the following changes have been made to the AFM Washing Unit Closure Plan, as indicated.

AFM Washing Unit Closure Plan, Sections 3 and 4.

Section 3.3. Materials/Equipment Decontamination. The following sentences have been added as a new paragraph at the end of Section 3.3. "The results obtained from the analysis described in Appendix B, Attachment B-1 will be compared to the Natural Uranium (U-nat.) removal levels listed in U.S. Atomic Energy Commission Regulatory Guide: Termination of Operating Licenses for Nuclear Reactors Regulatory Guide 1.86 (June 1974) Table 1. Tested materials suspected of containing U-nat are deemed removable for scrap/disposal when their contamination level is below 1,000 dpm α / 100 cm²."

Section 3.5. Sampling and Analysis Plan. The following sentences have been added. "Radiological samples will be analyzed for alpha emitting radionuclides as specified in Appendix B, Attachment B-1." The last sentence will be revised to read: "The number and type of rinsate and radiological samples are specified in Appendix B."

Section 4.3. Unit Decontamination, Process Equipment. The last sentence of the last paragraph has been revised as follows. "Once the course of action is cleared by inspection and radionuclide testing, the unit and frame will be dismantled..."

Section 4.4. Verification of Decontamination Measures. The following sentence has been added to the middle of the last paragraph. "Following decontamination, the alpha radionuclide activity will be measured to verify that the removable alpha radioactivity is less than 1000 dpm/100 cm²."

Appendix B

Section 1. Introduction. The following sentences have been added to the fourth paragraph. "Alpha radioactivity sampling will be conducted using the procedures contained in this Appendix. The analysis methodology is presented in Attachment B-1."

Section 2. Analytical Methods. The following sentences have been added. "Decontamination for radioactivity will be confirmed by measuring removable alpha levels following decontamination using the procedure described in Attachment B-1."

The amount of alpha (α) emitting radioactive material measured in disintegrations per minute (dpm) will be determined using the equipment and methodology described in Attachment B-1. Alpha radioactivity will be measured using an "ORTEC" Alpha Spectrometer."

Section 3. Sampling Program. The following sentences have been added to the first paragraph. "Radioactivity samples will be collected from a frame leg, the inside of the basin, a roller and the inside of the hood. A minimum of four samples will be collected for radioactivity."

Section 3.1 Sampling Locations: The following sentences have been added. "Radioactivity samples will be collected from a leg, the inside of the basin, a roller and the inside of the hood. A minimum of four samples will be collected for radioactivity."

Section 3.2. Sample Collection. The following sentences have been added as a new Section 3.2.3. **Radionuclide Samples** "After decontamination, the amount of removable radioactive material from 100 cm² of surface area will be collected by wiping the area with a dry filter or soft absorbent paper while applying moderate pressure. The sample will be returned to the petri dish and marked for identification."

Section 3.3 Sample Handling: The following sentences have been added "Disposable new latex examination gloves will be worn when handling radionuclide samples. A new pair of gloves will be used for each sample collected. Filter media or absorbent paper will be transported to and from the field in individual petri dishes. The sample will be returned to the laboratory to measure the gross alpha radioactivity."

Section 3.3.1. Sample Containers and Preservation: The following sentence has been added. "Radiological samples will be collected using filter paper that is stored and transported in petri dishes."

Section 3.3.2. Shipping Requirements and Holding Times: The following sentence has been added. "Radiological samples will be measured at the facility."

Section 4.1. Sampling Procedures. The following sentence has been added to the first paragraph. "Each petri dish containing a radiological sample will marked with sufficient information to identify the sample, the sample collector, the sampling location, the date, time, and any field observations that may be relevant."

Section 4.2.1. Field QC Checks. The following sentence has been added. "A duplicate radiological sample will be collected by collecting a wipe sample immediately adjacent to one of the samples from inside the hood or basin. In addition, a blank sample will be transported to the field and exposed in the petri dish during sample collection."

A new 3 page Attachment B-1 "Operating Procedure for the ORTEC Alpha Spectrometer" has been added to Appendix B.

3. Section 4, - Closure Procedures, 4.2 Waste Inventory Removal.

Prior to decontamination and dismantling of the unit, the AFM Washing Unit will be inspected to confirm that the inventory and all wastewater has been removed. If not empty, any wastewater in the unit will be discharged to the on-site Pond 18 through existing piping and Tanks V-1400 and V-3600.

The current case-by-case extension for continued use of Pond 18 does not include AFM Washing Unit decontamination water.

Response: As described in the response to comment #1 above, there is no remaining wastewater inventory at the unit and the last sentence of Section 4.2 has been deleted. However, the comment is relevant to Section 4.6.1 Disposal of Liquid Waste. FMC believes that wastewater from the AFM washing unit is included within the waste streams covered by the current case-by-case extension. FMC's position is detailed in the attached letter from David M. Heineck to Andrew Boyd dated September 14, 2001. Depending on the timing for initiating closure, FMC may not be able to route wastewater from the AFM washing unit closure through Tank V-3600 to Pond 18. Therefore the last sentence of Section 4.6.1 has been revised to "This washwater will be routed to MTR Pond 18 (WMU #15) via the existing piping, drain and Tanks V-1400 and V-3600, or otherwise managed in accordance with RCRA requirements."

5. Section 4 – Closure Procedures, 4.3, Process Equipment, paragraph 2.

Once the course of action is cleared by inspection, the unit will be dismantled and removed from the area for salvage/scrap or disposal.

Alpha and Beta Radioactivity measurements should be taken prior to the decision to salvage/scrap or dispose of process equipment.

Response: Refer to response to comment 2.

6. Appendix A, Task Specific Health and Safety Plan, Section 3 part 3.1, Chemical Hazards and Table A-1 Potential Effects of Chemicals that may be present.

Hydrogen Cyanide was omitted from the list of potential chemical hazards which may be present.

Response: Hydrogen cyanide (HCN) has been added to Table A-1. Appendix A in response to the comment.

However, it should be noted that hydrogen cyanide (HCN) is associated with furnace waste streams (primarily precipitator slurry). Since it is formed within the waste matrix and these waste streams were not present at the AFM Washing unit. The AFM, and thus the wash unit/wash water, does not contain material that has a significant potential to generate HCN.

7. Appendix A, Task Specific Health and Safety Plan, Section 9. Decontamination Procedures, page A-13 last sentence. Disposable PPE gear will be accumulated in containers and transported to an on-site landfill.

This statement should include: soiled disposable PPE will be accumulated in containers and tested for all eight RCRA Metals by the Toxicity Characteristics Leaching Procedure (TCLP), prior to determination of appropriate disposal options.

Response: The last bullet on page A-13 has been revised to read: "Disposable PPE gear will be accumulated in containers and transported for off-site disposal in accordance with RCRA requirements."

8. Appendix B, Field Sampling Plan.

1. Provide a section in the Field Sampling Plan describing procedures to test soiled disposable PPE for RCRA parameters.
2. Provide a section in the Field Sampling Plan describing procedures to test process equipment from the (AFM) Washing Unit, after decontamination, for Alpha and Beta Radioactivity levels.

Response: Item 1. FMC has agreed to dispose of containerized disposable PPE off-site in accordance with RCRA requirements. The following sentence has been added to Appendix B, Section 3.5: "Disposable PPE gear will be accumulated in containers and transported off-site for disposal in accordance with RCRA requirements."

Item 2. Specifically, Appendix B has been revised (as shown in the response to comment #2) to include measuring the radioactivity level following decontamination. Refer to FMC's response to comment 2.

9. Additional Request. Provide the Shoshone-Bannock Tribes CERCLA/RCRA program with the following information:
1. Notification prior to commencement of field work, seven working days.
 2. All analytical results from closure activities including: Analysis from initial rinsing of equipment and gross alpha and beta measurements taken of process equipment, after decontamination.
 3. Disposal option selection for waste.
 4. Copy of any Waste Manifest or Waste Profile, new or amended, that results from this closure.

Response:

1. Astaris agrees to provide verbal notice to the Tribes at least 7 days in advance of initiating field work for the AFM washing station closure. The closure plan has not been revised.
2. Analytical results related to closure of the AFM washing unit will be provided to EPA and Tribes in the closure report supporting Closure Certification.
3. A description of the disposition of materials and wastes created during closure of the unit will be provided to EPA and the Tribes in the closure report supporting Closure Certification.
4. Any hazardous waste manifests related to wastes from AFM washing unit closure will be provided to EPA and Tribes in the closure report supporting Closure Certification.